Claims

1. A method for at least in part inhibiting binding of a C-type lectin or a carbohydrate-binding part thereof to a ligand of said C-type lectin, comprising providing a binding molecule capable of specifically blocking binding of a glycoconjugate to said C-type lectin wherein said glycoconjugate comprises at least two mannose residues in α1,2 linkage or, at least a fucose residue or at least one end-standing N-acetylglucosamine residues, or a derivative, a combination or a multimer of said residues.

2. A method according to claim 1, wherein said binding molecule is specific for at least two mannose residues in α1,2 linkage or for a fucose residue, or for at least aone end-standing N-acetylglucosamine residues present on a glycoconjugate, or a derivative, combination or multimer of said residues.

3. A method according to claim 1 or claim 2, further comprising a cell comprising said C-type lectin.

4. A method according to claim 3, wherein said cell comprises an antigen presenting cell.

5. A method according to claim 4, wherein said cell comprises a dendritic cell or a macrophage.

6. A method according to any one of claims 1-5, wherein said C-type lectin comprises DC-SIGN, L-SIGN, mSIGNR1, and/or DC-SIGNR, or a DC-SIGN homologue.

7. A method according to any one of claims 1-6, wherein said fucose is linked to an aniomer and wherein said linkage allows binding of said glycoconjugate to said C-type lectin.

8. A method according to any one of claims 1-7, wherein said glycoconjugate comprises a fucose residue comprises Lewis bloodgroup

antigen, Le^x, Le^y, Le^a, Le^b or LDNF or a C-type lectin binding part, derivative and/or analogue thereof.

9. A method according to any one of claims 1-8, wherein said ligand comprises a (tumor) antigen, a pathogen and/or a cell associated receptor.

10. A method according to claim 9, wherein said cell associated receptor comprises ICAM-2, ICAM-3, CD166, CD11b, or CD66 or a functional part, derivative and/or analogue thereof.

11. A method according to claim 9, wherein said pathogen comprises a virus, a (myco)bacterium, a fungus or a parasite.

12. A method according to claim 11, wherein said pathogen comprises a human immunodeficiency virus, a *helicobacter*, a *neisseria meningitidis*, a *leishmania*, a *schistosoma*, a *klebsiella*, a probiotic lactobacillus, hepatitis C virus, a herpes simplex virus or an ebola virus.

13. Use of a glycoconjugate comprising at least two mannose residues in α1,2 linkage or a glycoconjugate comprising a fucose residue or a glycoconjugate comprising at least one end-standing N-acetylglucosamine residues, or a derivative, combination or multimer of said residues for at least in part inhibiting the binding of a ligand to a C-type lectin or a lectin-binding part thereof.

14. Use of a specific binding partner of a C-type lectin for at least in part inhibiting binding of a cell comprising said C-type lectin to an NK-cell, a granulocyte, a T cell or a tumor cell.

15. Use of carbohydrate binding molecule specific for a glycoconjugate comprising at least two mannose residues in α1,2 linkage or a fucose residue or for at least one end-standing N-acetylglucosamine residues, or a derivative or multimer thereof , for at least in part inhibiting the binding of said glycojungate to a C-type lectin.

16. A use according to claim 15, wherein said carbohydrate binding molecule comprises an antibody or a soluble derivative of said C-type lectin.

17. A use according to claim 15 or claim 16, wherein said C-type lectin is present on a cell.

18. A use according to claim 14 or claim 17, wherein said cell is a dendritic cell or a macrophage.

19. A use according to any one of claims 13-19, wherein said binding partner of said C-type lectin comprises a glycoconjugate comprising at least two mannose residues in α1,2 linkage or a glycoconjugate comprising a fucose residue, or a glycoconjugate comprising at least one end-standing N-acetylglucosamine residues, or a derivative or multimer of said residues.

20. A method for modulating the activity of a Toll-like receptor signaling pathway in a cell, wherein said cell comprises a Toll-like receptor and a C-type lectin, said method comprising providing a binding molecule capable of specifically blocking binding of a glycoconjugate comprising at least two mannose residues in α1,2 linkage or glycoconjugate comprising a fucose residue, or a glycoconjugate comprising at least one end-standing N-acetylglucosamine residues, or a derivative or multimer of said residues, to said C-type lectin.

21. A method according to claim 20, wherein said binding molecule is specific for a glycoconjugate comprising at least two mannose residues in α1,2 linkage or a glycoconjugate comprising a fucose residue, or a glycoconjugate comprising at least one end-standing N-acetylglucosamine residues, or a derivative or multimer of said residues.

22. A method according to claim 20, wherein said binding molecule is a C-type lectin binding molecule comprising a glycoconjugate comprising a mannose, a fucose residue, or a N-acetylglucosamine residue or a derivative, a combination or multimer of said residues.

23. A method according to claim 22, wherein said C-type binding molecule comprises a glycoconjugate comprising a mannose or a derivative, or multimer thereof.

24. A method according to claim 23, wherein said C-type binding molecule comprises a glycoconjugate comprising at least two mannose residues in α1,2 linkage or analogously acting compound.

25. A method according to any one of claims 20-24, wherein said cell is contacted with a ligand for said Toll-like receptor.

26. A method for stimulating maturation of a dendritic cell that is contacted with a Toll-like receptor ligand and a glycoconjugate comprising a mannose, a fucose residue, a N-acetylglucosamine residue or a derivative, a combination or multimer of said residues, said method comprising providing said dendritic cell with a binding molecule capable of blocking the binding of said glycoconjugate to said C-type lectin.

27. A method according to claim 26, wherein said dendritic cell is provided with a binding molecule specific for a glycoconjugate comprising at least two mannose residues in α1,2 linkage or a glycoconjugate comprising a fucose residue, or a glycoconjugate comprising at least one end-standing N-acetylglucosamine residues, or a derivative or multimer of said residues.

28. A method according to claim 26 or claim 27, wherein said binding molecule comprises an antibody or a functional part, derivative and/or analogue thereof.

29. A method according to claim 26 wherein said antibody is a C-type lectin specific antibody.

30. Use of a glycoconjugate comprising mannose or a fucose residue or a derivative or multimer thereof for the preparation of a medicament.

31. Use of a binding molecule specific for a glycoconjugate comprising at least two mannose residues in α1,2 linkage or a glycoconjugate comprising a fucose residue, or a glycoconjugate comprising at least aone end-standing N-acetylglucosamine residues, or derivative or multimer of said residues for the preparation of a medicament.

32. A use according to claim 31 or claim 32, for the preparation of a medicament for the treatment of an immune system associated disease.

33. A use according to claim 31 or claim 32, for the preparation of a medicament for the treatment of an acquired disease.

34. A use according to claim 33, for the treatment of an individual suffering from an infection with human immunodeficiency virus, mycobacteria, a *helicobacter*, a *leishmania*, a *neisseria meningitidis*, a *leishmania*, a *schistosoma*, a *klebsiella*, a probiotic lactobacillus, hepatitis C virus,, a herpes simplex virus, or an ebola virus.

35. Use of a glycoconjugate comprising and antigen and a fucose residue or a derivative or multimer thereof, for the preparation of a vaccine.

36. A use according to claim 35, for stimulating an antigen specific immune response in said individual.

37. A use according to any one of claims 30-36, for the treatment of an individual suffering from a cancer, an autoimmune disease or a transplantation related disease.

38. A method for determining whether a compound is capable of modulating an activation state of a dendritic cell comprising providing said dendritic cell with a compound capable of specifically binding to a c-type lectin and determining whether a Toll-like receptor signaling pathway in said dendritic cell is modulated.

39. Use of a glycoconjugate comprising a mannose residue or a fucose residue, or a N-acetylglucosamine residue or a derivative, combination or multimer of said residues for separating a DC-SIGN positive cell from a DC-SIGN negative cell.

40. Use of a DC-SIGN or a carbohydrate binding part, derivative and or analogue thereof for purifying a molecule comprising a glycoconjugate comprising at least two mannose residues in α1,2 linkage or glycoconjugate comprising a fucose residue, or a glycoconjugate comprising at least one end-standing N-acetylglucosamine residues, or a derivative or multimer thereof.

41. A water soluble proteinaceous molecule comprising a carbohydrate binding part of a C-type lectin.

42. A water soluble proteinaceous molecule according to claim 41, comprising a carbohydrate binding part of DC-SIGN.

43. A water soluble proteinaceous molecule according to claim 42, further comprising a part of an immunoglobulin.

44. An antibody comprising a binding specificity for a carbohydrate binding part of DC-SIGN or a functional part, derivative and/or analogue thereof.

45. An antibody comprising a binding specificity for a glycoconjugate comprising a fucose residue or a glycoconjugate comprising a mannose residue, or a glycoconjugate comprising at least one end-standing N-acetylglucosamine residues or a derivative, combination or multimer of said residues.

46. An antibody according to claim 45, comprising no binding specificity for said glycoconjugate in the absence of said fucose, N-acetylglucosamine or mannose residue.

47. An antibody according to claim 45 or claim 46, wherein said antibody comprises a binding specificity for at least two mannose residues in α1,2 linkage.

48. An antibody according to any one of claims 44-47, wherein said antibody is herein identified as Hp151, 4D2, 54.1F6A, NAM61-1A2, SMLDN1.1, SMFG4.1, 6H3, AZN-D1, AZN-D2 or AZN-D3 or a functional part, derivative and/or analogue thereof.

49. A human or humanized antibody comprising an antigen binding part of an antibody according to claim 48.

50. Use of an antibody according to any one of claims 44-49 or a water-soluble proteinaceous molecule comprising a carbohydrate binding part of a C-type lectin for the preparation of a medicament.

51. Use according to claim 50, for the treatment of an infection with a pathogen, preferably, of human immunodeficiency virus, a mycobacterium, a fungus, a helicobacter, a leishmania, a schistosoma, a klebsiella, a probiotic

lactobacillus, a Neisseria meningitis a herpes simplex virus, a hepatitis C virus or an ebola virus.

52. Use of an antibody according to any one of claims 44-49 or a water-soluble proteinaceous molecule comprising a carbohydrate binding part of a C-type lectin for at least in part preventing binding of a glycoconjugate comprising at least two mannose residues in α1,2 linkage or a glycoconjugate comprising a fucose residue, or a glycoconjugate comprising at least one end-standing N-acetylglucosamine residues, to the C-type lectin DC-SIGN.